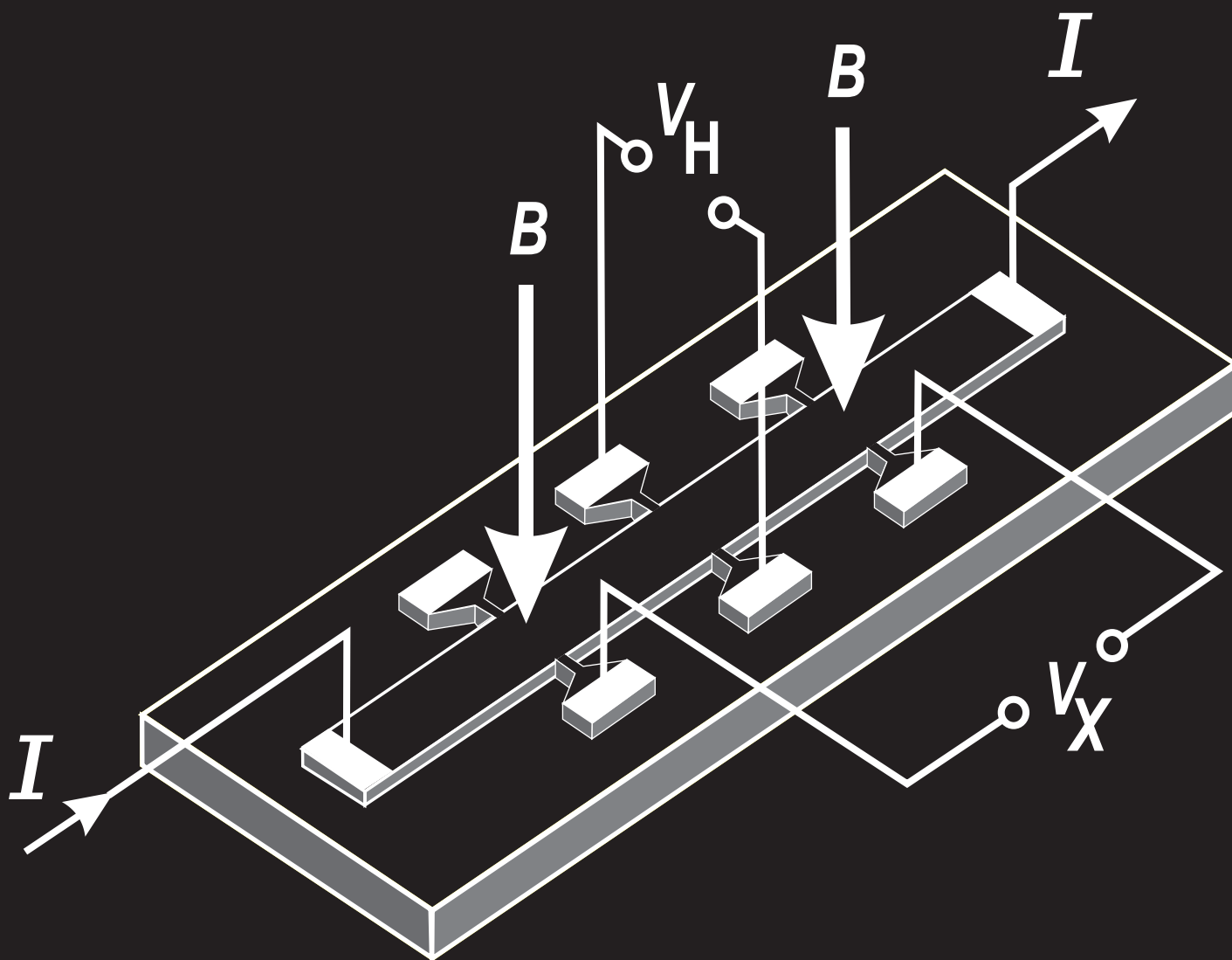


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- Magnetic Technology¹

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- Software Diagnostics and Conformance Testing
- Statistical Engineering

¹At Boulder, CO 80303

²Some elements at Boulder, CO

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Cover: Representation of device used in first attempt at NIST to develop a quantum impedance standard based on the existing quantized Hall resistance standard that defines the Ohm. AC or dc current I passes through the device perpendicular to magnetic field B , creating a quantized Hall voltage V_H across the device, a longitudinal voltage V_x along the device, and quantized Hall resistance $R_H = V_H/I$. Please see article on p. 391. Illustration arranged by C. Carey.

The *Journal of Research of the National Institute of Standards and Technology*, the flagship periodic publication of the national metrology institute of the United States, features advances in metrology and related fields of physical science, engineering, applied mathematics, statistics, biotechnology, and information technology that reflect the scientific and technical programs of the Institute. The *Journal* publishes papers on instrumentation for making accurate measurements, mathematical models of physical phenomena, including computational models, critical data, calibration techniques, well-characterized reference materials, and quality assurance programs that report the results of current NIST work in these areas. Occasionally, a Special Issue of the *Journal* is devoted to papers on a single topic. Also appearing on occasion are review articles and reports on conferences and workshops sponsored in whole or in part by NIST.

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